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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/625,506	07/24/2003	Katsuaki Minami	GOT 174	9005

23995 7590 08/11/2005

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EXAMINER

LOUIS JACQUES, JACQUES H

ART UNIT	PAPER NUMBER
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3661

DATE MAILED: 08/11/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/625,506

Applicant(s)

MINAMI ET AL

Examiner

Jacques H. Louis-Jacques

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 May 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 9-15 is/are allowed.
- 6) ☒ Claim(s) 1-8 and 16-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-6 and 16-18, 21 are rejected under 35 U.S.C. 102(b) as being anticipated by Strifler [4,494,404].

Strifler discloses a fuel consumption monitoring system for motor vehicle with manual-shifted transmissions. According to Strifler, an amount of fuel consumed prior to an operation of the vehicle (i.e., gearshifting) is determined, then such amount of fuel consumed is compared to the amount of fuel consumed after the operation of the vehicle is performed in order to obtain an excess of fuel consumed, which is then displayed to the driver of the vehicle. See abstract. See also column 12. According further to Strifler, as described in column 1, lines 6-21, the monitoring system emits an indicating signal informing the driver of the fuel utilization to be expected if another gear were selected. See also column 4, lines 18-68. See also columns 5 and 6. The monitoring system of Strifler provides the driver with a decision-aid to enable him to optimize his choice of gear ratio with regard to minimizing the fuel consumption. Strifler discloses generating a warning to a driver when it is detected that the operation that worsens fuel economy has been performed (columns 4 and 12-13). Furthermore, Strifler discloses a recording device (e.g., a memory) for recording excess fuel consumption, when the excess fuel

consumption is displayed to the driver on the display device based on the causes (gear ratio or gearshift, vehicle speed, etc. See column 14-16. According still to Strifler, the operation that worsens the fuel economy can be an acceleration of the vehicle, i.e., when the vehicle accelerates by a greater acceleration than a predetermined rapid acceleration determination value. Strifler also discloses that processing operating (processor) determines that an upshift is possible when an engine rotation speed following an upshift is higher than a specified rotation speed (column 1), and a drive force at full load following an upshift is greater than a current running resistance (column 2). That is, Strifler discloses the condition when the vehicle is climbing a hill. The operation, according to Strifler can also be a deceleration of the vehicle, i.e., when the vehicle decelerates by a greater deceleration than a predetermined rapid deceleration determination value. Still, according to Strifler, the operation can be the vehicle speed, i.e., when the vehicle runs at a higher vehicle speed than a specified vehicle speed. See columns 1 and 2. Furthermore, according to Strifler, the system determines whether an upshift is possible (i.e., selecting a higher gear) and determines that the operation that worsens fuel economy has been performed when the vehicle runs without an upshift under conditions in which upshift is possible. See columns 1 and 2. See also columns 3 and 4. According further to Strifler, the monitoring system comprises a display device or displaying the calculated excess (difference) fuel consumption. See column 9.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Strifler [4,494,404] in view of Ehlbeck et al [6,092,021].

Strifler does not particularly disclose that the operation that worsens fuel economy has been performed when the vehicle racing. Ehlbeck et al, on the other hand, discloses a fuel use efficiency system for a vehicle for assisting the driver to improve fuel economy, wherein an operation that worsens fuel economy is performed when the vehicle is racing, i.e., dragging. The system, according to Ehlbeck et al, indicates to the driver when inefficient fuel use is detected. For example, it displays a measure of excess fuel consumed and messages indicating actions that can be taken to improve fuel economy in response to detecting inefficient fuel use. Thus, it would have been obvious to one skilled in the art at the time of the invention to be motivated to modify the fuel consumption monitoring system for motor vehicle of Strifler by incorporating the racing operation from the fuel system of Ehlbeck et al because such modification, as suggested to Ehlbeck et al, would provide a fuel system that would dynamically detect inefficient driving actions and indicating information about excess fuel consumption to the driver.

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5. Claims 8, 19 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Strifler [4,494,404] in view of Horgan et al [5,954,617].

Strifler does not particularly disclose ranking the driving skill of a driver based on the frequency (i.e., amount of time or occurrence) with which operations that worsen fuel economy are performed and display such driving skill rank. Horgan et al, on the other hand, discloses a system for controlling internal combustion engine performance in accordance with driver behavior, whereby driver rank or performed is determined based on the frequency with which operations that worsen fuel economy are performed. See columns 2 and 3. See also columns 15 and 16. Furthermore, as described in column 3, the frequency with which operations that worsen fuel economy are performed is displayed on a display device and recorded on a recording device. Thus, it would have been obvious to one skilled in the art at the time of the invention to be motivated to modify the fuel consumption monitoring system of Strifler by incorporating the ranking of the driver performance from the performance control system of Horgan et al because such modification, as suggested by Horgan et al, would provide a system that would encourage drivers to operate their vehicles in accordance with predefined vehicle operational goals, thereby improving the overall fuel economy of the vehicle.

Allowable Subject Matter

6. Claims 9-15 are allowed over the prior art.

Response to Amendments & Arguments

7. The amendments along with the arguments filed therewith on May 24, 2005 have been entered and carefully considered by the examiner.

Applicant has amended the claims to recite, “calculate an amount of fuel already consumed in excess...” Emphasis added.

Applicant argued that Strifler predicts a consumption difference ΔQ in the future, that is, a difference which can be expected if the gearshift recommendation is followed. According to Applicant, the instant claims, in contrast, recite computing excess fuel Q_{ex} that has already actually been consumed in the past.

The examiner disagrees.

First, Strifler does not predict a consumption difference, but rather determines the difference between an actual fuel consumption (amount) and predicted fuel consumption. The present claims, like Strifler, recite determining an operation that worsens fuel economy (e.g., gear shifting). If the operation has been performed, an actual amount of consumed fuel is calculated. For sake of illustration, let's call it F_{AA} . Also, *if the operation has been performed*, an amount of fuel which would have been consumed had the operation which worsens fuel economy not been performed is calculated. Let's call this amount of fuel, F_{PA} . It should clearly be noted that the amount F_{PA} is a “predicted” amount since it is determined or calculated as the amount of fuel that “would have been” consumed (but not actually consumed) had the operation which worsens fuel economy “not been” performed. This amount of fuel can be called “predicted”, or “expected”, or

“conditional”, or any other name, since it has not actually occurred. Strifler discloses, as noted by Applicant, such amount of fuel.

Strifler discloses, like the present claims, the difference (i.e., excess amount) between the actual amount of fuel consumed (F_{AA}) and the [predicted] amount of fuel (F_{PA}) (i.e., an amount of fuel which would have been consumed had the operation which worsens fuel economy not been performed).

In column 2, lines 17-34, for example, Strifler discloses the situation, i.e., the economizing effect, in which the fuel consumption is not obtained until the driver has actually changed gears. See also column 2, lines 35-51. Further in the same column, Strifler describes the situation where if the gear is not yet changed, then what would the fuel consumption have been. In column 3, lines (specially at lines 20-46) and column 4 (at lines 4-37), Strifler describes using the amount of fuel that has been *actually consumed* and the amount of fuel that *would have been consumed* to calculate an excess amount of consumed fuel; that is, by the taking the difference between the two amounts (actual or expected) of consumed fuel. With respect to the specific citations, it is noted that entire columns referred to in the office action deals with the concept of taking the difference between the actual amount of fuel being consumed and the amount of fuel that would have been consumed.

It is further noted that, in column 3, lines 52-57 and column 4, lines 50-54, Strifler describes situations in which the vehicle is stationary. This conclusion comes from the fact that the fuel consumption monitoring system provides the driver with quantitative information with regard to the fuel consumption he *should expect* if he executes a change

of gear ration; that is the gear has not been changed. See also column 6, lines 42-61. Ehlbeck '201, in addition, describes situation where the vehicle is stationary as well as situation where the vehicle is moving. While not specifically described, however, when reading the disclosure of Ehlbeck '201, for example in columns 7 and 8, it reveals the situation where the racing occurs while the vehicle is stationary.

With regard to the Horgan et al patent, it is noted that the system of Horgan et al considers the driver behavior or demand (i.e., the driver skill). See abstract. Furthermore, the performance award (penalty time) is determined based on the driver's driving rank. See column 2, lines 30-50, column 3, lines 1-10, and column 4, lines 1-18.

In light of the above, all the arguments have been addressed and support thereof has been provided. Accordingly, the claims remain rejected and this office action is made final.

Conclusion

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

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however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jacques H. Louis-Jacques whose telephone number is 571-272-6962. The examiner can normally be reached on M-Th 5:30 AM to 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Black can be reached on 571-272-6956. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jacques H Louis-Jacques
Primary Examiner
Art Unit 3661

/jlj

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JACQUES H. LOUIS-JACQUES
PRIMARY EXAMINER